

IN THE CLAIMS:

All claims have been amended herein. Please note that all claims currently pending and under consideration in the referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A DRAM circuit comprising:
a substrate ~~having a an~~ having an active region thereon and a capacitor structure disposed above ~~said-the~~ the active region, ~~the said~~ the capacitor structure including a storage node, a dielectric layer overlying ~~the said~~ the storage node, and a conductive cell plate overlying ~~the said~~ the dielectric layer, each of ~~the said~~ the dielectric layer and ~~the said~~ the conductive cell plate having an end portion proximate a conductive contact, ~~the said~~ the conductive contact extending downward and adjacently beside ~~the said~~ the capacitor structure, ~~the said~~ the end portion of ~~the said~~ the dielectric layer extending closer to ~~the said~~ the conductive contact than ~~the said~~ the end portion of ~~the said~~ the conductive cell plate;
a first TEOS layer disposed proximate ~~the said~~ the storage node;
a second TEOS layer disposed over ~~the said~~ the capacitor structure and encasing ~~said-the~~ the end portions of ~~the said~~ the dielectric layer and ~~the said~~ the conductive cell plate, ~~said-the~~ the second TEOS layer disposed between ~~said-the~~ the capacitor structure and ~~said-the~~ the conductive contact; and
a doped BPSG layer disposed over ~~said-the~~ the second TEOS layer, ~~said-the~~ the conductive contact extending through ~~said-the~~ the BPSG layer and ~~said-the~~ the second TEOS layer.

Claims 2-3 (Canceled)

4. (Currently Amended) The DRAM circuit of claim 1, wherein each of ~~said-the~~ the storage node and ~~the said~~ the conductive cell plate are heavily doped with dopants.

5. (Currently Amended) The DRAM circuit of claim 1, wherein each of ~~said-the~~ storage node and ~~the said~~-conductive cell plate comprise a phosphorous-doped polysilicon.

6. (Currently Amended) The DRAM circuit of claim 1, wherein ~~the said~~-dielectric layer comprises a capacitor cell dielectric layer.

7. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said-the~~ dielectric layer comprises a nitride layer.

8. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said-the~~ capacitor structure comprises a container-shaped capacitor.

9. (Currently Amended) The DRAM circuit of claim 1, wherein ~~the said~~-second TEOS layer is a dopant barrier between ~~the said~~-capacitor structure and said BPSG layer.

10. (Currently Amended) A semiconductor memory device comprising:
a semiconductor substrate having an active region thereon and a capacitor structure formed above ~~the said~~-active region, ~~said-the~~ capacitor structure including a first conductive layer, a second conductive layer, and a dielectric layer, ~~the said~~-dielectric layer disposed between ~~said-the~~ first and second conductive layers, each of ~~said-the~~ dielectric layer and ~~the said~~-first and second conductive layers having an end portion proximate a conductive contact, ~~said-the~~ conductive contact extending downward and adjacently beside ~~said-the~~ capacitor structure, ~~said-the~~ end portion of ~~said-the~~ dielectric layer extending closer to ~~said-the~~ conductive contact than ~~said-the~~ end portion of each of ~~the said~~-first conductive layer and ~~said-the~~ second conductive layer;
a diffusion barrier proximate ~~the said~~-first conducting layer and configured to prevent diffusion of contaminants into ~~said-the~~ active region;

a TEOS layer disposed over ~~said~~the capacitor structure and encasing ~~said~~the end portions of the ~~said~~dielectric layer and each of ~~said~~the first conductive layer and ~~said~~the second conductive layer, ~~said~~the TEOS layer disposed between ~~said~~the capacitor structure and ~~said~~the conductive contact; and

a doped BPSG layer disposed over ~~said~~the TEOS layer, the ~~said~~conductive contact extending through ~~said~~the BPSG layer and ~~said~~the TEOS layer.

Claims 11-12 (Canceled)

13. (Currently Amended) The device of claim 10, wherein ~~said~~the conductive contact comprises at least one of metal and conductively doped polysilicon.

14. (Currently Amended) The device of claim 10, wherein ~~said~~the conductive contact comprises a digit line.

15. (Currently Amended) The device of claim 10, wherein each of ~~said~~the first conductive layer and ~~said~~the second conductive layer are heavily doped with dopants.

16. (Currently Amended) The device of claim 10, wherein each of the ~~said~~first conductive layer and ~~said~~the second conductive layer comprise a phosphorous-doped polysilicon.

17. (Currently Amended) The device of claim 10, wherein ~~said~~the dielectric layer comprises a capacitor cell dielectric layer.

18. (Currently Amended) The device of claim 10, wherein ~~said~~the dielectric layer comprises a nitride layer.

19. (Currently Amended) The device of claim 10, wherein ~~the~~ said-capacitor structure comprises a container-shaped capacitor.

20. (Currently Amended) The device of claim 10, wherein ~~said~~-the TEOS layer is a dopant barrier between ~~the~~ said-capacitor structure and ~~said~~-the BPSG layer.

21. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~-the first TEOS layer is configured to prevent diffusion of contaminants into ~~said~~-the active regions.

22. (Currently Amended) The DRAM circuit of claim 1, wherein ~~said~~-the first TEOS layer comprises a thickness of about 100 Å to about 250 Å.

23. (Currently Amended) The semiconductor memory device of claim 10, wherein ~~said~~ the diffusion barrier comprises a nitride layer or TEOS layer.

24. (Currently Amended) The semiconductor memory device of claim 10, wherein ~~said~~ the diffusion barrier comprises a thickness of about 100 Å to about 250 Å.